

## **INTRODUCTION**

The Oakland Unified Schools District developed the District wide Educational Technology Action Plan to articulate a common vision for technology in Oakland schools and provide a road map for the effective integration of technology into all phases of the instructional program and administration of the District.

## **TECHNOLOGY**

### **PLAN: MISSION**

Technology has become a permanent component of a sound educational program and is resulting in major changes in the education. Therefore, technology must be rooted in the entire educational process. It must also be an integral and required part of education that is included in the same processes that define what and how we teach to the whole student.

The purpose of the Educational Technology Plan is to support and strengthen the District's Educational Plan. The District is committed to prepare all students for citizenship in a changing local and global community as well as for the workplace of tomorrow. Our students must have access to the technology which will enrich their education and which will be an integral part of their lives in the future. Educational technology offers a set of tools which enhance student learning and increase the productivity of staff. The technology tools can be used to improve, augment and support curriculum and delivery of instruction as well as the overall management of District resources. The focus of this plan is the education of all Oakland students.

To this end technology will be used to improve the quality of instruction, improve staff capabilities, inform and educate families and the community and improve operations of the District.

## **INTEGRATION OF TECHNOLOGY**

*Technology must be an integral and required part of education - one that is included in the same processes that define what and how we teach to the whole student. The use of technology must be driven by the curriculum and the needs of student and be wedded to school reform. It must be utilized as a tool to foster curiosity and the love of learning and to develop the basic skills of critical thinking, problem solving, and interpreting, analyzing and synthesizing information.*

**Curriculum Integration:** Technology will be integrated into all curricular areas and into the curriculum development and adoption process and will be used effectively to deliver curriculum and instructional resources. This integration process will incorporate all special services, including bilingual education, early childhood education, exceptional children programs and adult education.

## **INTEGRATION OF TECHNOLOGY**

*(continued)*

**Technology Learning Continuum:** All students will be able to use technology in the learning process and master the technology tools that are essential for success in the workforce. The District will develop a scope and sequence of technology skills that reinforce essential learning skills (example, critical thinking, analysis and synthesis, social cooperation). Teachers will be trained in the use of the required technology, including legal and ethical uses.

**Evaluation of Technology Use:** The impact of technology on student learning and teacher effectiveness will be evaluated on a regular basis.

**Technology as an Assessment Tool:** Technology will be used to improve assessment of student performance and to provide timely information on student achievement to both students and parents.

## **STAFF DEVELOPMENT**

*Technology training for teachers and staff will be an ongoing District and School Site priority. Training will be designed to emphasize integration of technology into the curriculum, technology as a tool to strengthen teaching reforms, the role of teachers as learning facilitators, assessment, & improved productivity. Technology training and support will be accessible to all staff, and all staff will be technology literate. Each school will have on-site technology expertise.*

**Training Curriculum:** The District will prepare guidelines for professional growth in technology which will address all four levels of learning: awareness, investigation, integration/assimilation and upgrading of skills. The curriculum will be tied to the students' technology learning continuum and benchmarks.

Training will strengthen on-site technology expertise. To this end the District and school sites will train and support a cadre of technologists, technology curriculum specialists and telementors as teacher trainers to train and support school site staff. The District will deliver technology training in a wide variety of formats including video, teleconferences, electronic communications. The District and school sites will develop partnerships with other institutions to provide staff development. Schools will make teacher training a priority and will dedicate a portion of its resources for technology training.

**Incentive Programs:** The District and school sites will have incentive programs to encourage all staff to upgrade their technology skills on a regular basis.

**Technology Resources & Training Center:** Curriculum & Instruction will be responsible for training curriculum for teachers offered through the Technology Resources & Training Center, and the training will be an integral part of C&I's comprehensive staff development and curriculum plans. Business Services and other administrative divisions will work with the Center to identify their technology training needs. The Center will be the vehicle for coordinating and delivering training to teachers and administrative staff.

### *STAFF*

#### *DEVELOPMENT (continued)*

**The Resource Center will provide:** technology training for teachers and staff, a technology information and software library, clearinghouse of exemplary technology applications and plans; preview stations for software; multi-media stations, technology loan programs; and demonstrations of state of the art technologies. The Center will house computer labs which support the standard computer platform and will work with schools and other agencies in Oakland to expand teacher access to technology and training.

**Other Support Services:** Teachers and administrators will have ready access to trouble-shooting and information on effective applications, model programs, and trends. The District will encourage the formation of technology user groups.

**Technology Literate Staff:** All teaching staff and administrators will be technology literate. In addition to providing training and support for teachers and administrators, the District will strengthen on-site technology expertise through new hires, mentor programs and other programs.

**Evaluation:** Site and District level evaluations will be conducted to assess progress in staff development.

### *ACCESS TO TECHNOLOGY*

*All students & staff will have equitable and ready access to appropriate technology.*

**Student Access to Computer Technology:** Every student will have ready access to a computer capable of electronic communications and to appropriate adopted software. These computers will be networked, and all students will have ready access to the Internet and other electronic information services.

**Staff Access to Technology:** All teachers will have a computer workstation with a network connection and software capable of supporting instructional, classroom management, assessment, personal productivity, Internet and other electronic information retrieval activities. The District will provide teachers access to current technologies and software at a centrally located Technology Resource Center. The District will set up a site-based technology loan program and arrange for purchasing discounts to enable teachers and staff to acquire computers for use at home.

**Basic Technology Packages:** All schools will have the same core basic technology package for teacher and student use upon which individual schools may build. The basic technology package will include access to the tools of communication, including telephone, fax, cable television and network capability, and a full range of technology, including duplication and collating equipment, overhead projectors, VCRs and presentation monitors, and class sets of calculators. Standards will be set for the basic technology packages.

### ***LIBRARY/ MEDIA CENTERS***

*Each school will have a fully equipped library &/or media center serving as the technology hub of the school.*

**Basic Technology Package for Libraries/Media Centers:** Each school will have at least one media center equipped with video and multimedia equipment, software library, network connection and phone lines, and access to electronic information services. The library will be equipped with video and multimedia equipment, a network connection and access to electronic information services. Where feasible the library will serve as the media center.

**Library Services:** Libraries will have automated circulation and catalog systems for library materials and textbooks. Library systems will be integrated into the District's administrative network system. Classrooms will have access to the school library and media center through a school wide LAN. The library standards of achievement and sequential curriculum will incorporate information retrieval and other technology tools.

**Staffing:** A librarian trained in technology, a telementor and/or a trained instructional assistant will staff each library/media center. Students receiving special technology training will be placed in library/media centers.

### ***SCHOOL TO WORK***

*Technology will be an essential element in the District's comprehensive K-Adult Career Preparation System. Technology will be used to prepare students for a wide variety of careers and to strengthen all phases of the school to work transition. Students will master and apply the technological tools which will be an integral part of the workplace of tomorrow.*

**Career Preparation System - Implementation:** The District will ensure that technology is appropriately integrated into all phases of the Career Preparation System and that all staff and school teams implementing the program will be technology literate. Parents will be introduced to the technology based components of the career preparation program.

**Career Preparation System - Initiatives:** Technology will be used throughout the system as a tool for career awareness, exploration and preparation. All students will become knowledgeable about the role of technology in their daily lives and will master those technology skills which are basic to success in school and in the changing workplace. Students will be afforded opportunities to prepare for and gain work experience in telecommunications and other technologies required in all careers and to use technology tools to solve real life problems.

## **FAMILIES & COMMUNITY**

*Schools will use technology to strengthen their roles as community hubs. The District will build partnerships with parents, educational institutions and resources, community agencies, and the City to promote the best and most cost-effective integration of technology in our schools. Parents will become more involved in their children's education by having ready access to information on their student's progress, class assignments and school programs as well as on the activities of the school and the District. The District will collaborate with parents and members of the community to provide access to technology and technology training.*

**Community Partnerships:** The District will seek partnerships with parents, community organizations, educational institutions, the business community, the City and regional agencies to coordinate technology planning and implementation, to expand community education, build the network infrastructure and applications, reduce costs and bring expertise and resources to the schools and the District.

**Community Education:** Access to technology and technology training will be offered to parents and members of the community by the District and at school sites. The District will expand opportunities for adult education and instructional programs for parents using the resources of the schools and distance education technologies, including KDOL-TV and other electronic media.

**Community Information:** Parents will be able to communicate directly with their student's teachers and administrators using voice mail, e-mail and other electronic means. The District will utilize KDOL-TV, live call-in and other video resources on a regular basis to provide information about the schools and to involve parents and the community in the decision making of the District. The District will regularly hold live, interactive community forums and teleconferences to involve the community in the decision making of the District and to involve Oakland in regional, state and national educational policy debates.

## **VIDEO COMMUNICATION**

*Video & interactive technology will be used to ensure equitable access to instruction, to strengthen classroom instruction and to extend new learning opportunities to students, staff and the community. The District will be capable of delivering two way video communications and to originate live programming from multiple sites throughout Oakland. All staff and students should be familiar with the video, cable television and satellite technology available in the District.*

**KDOL-TV Facilities:** KDOL-TV will manage the educational TV channels and be capable of providing video production and post-production services for the Board, District departments and school sites; training of students and teachers in video communications; and delivering a wide range of interactive video services, including teleconferences and distance learning activities.

### VIDEO

#### COMMUNICATION (*continued*)

**Site Facilities:** Each school site will be able to utilize video in the classroom as an instructional tool and to support staff development. Each classroom will have a cable TV hook up and a VCR with a large monitor. Each school will maintain a tape library that includes bilingual materials and at least one video production and post production unit for teacher check out. Each school will have at least one room capable of sending and receiving video for interactive distance learning activities.

**Video Delivery of Instruction:** The District will utilize video, cable television, ITV, and satellite delivered programming to strengthen classroom instruction and deliver instruction to the home and non-traditional learning locations. The District will build its capacity to utilize a variety of interactive technologies. (See also Strands # 3: Professional Development & # 6: Community Education & Community Information)

**Video Production Training:** All students and teachers will be familiar with the use of video in instruction as well as video production and communications technologies. Working with Vocational Education and Curriculum and Instruction, KDOL-TV will support curriculum based production training programs and expand its student and teacher training activities.

**Staffing:** The District will develop and maintain a professional production staff to support a fully functioning educational channel and distance education program and to provide training for students and staff. KDOL-TV will recruit interns from local colleges and universities to augment the channel's resource and to provide training opportunities for local media students.

### NETWORKING

*The District will maintain a robust broad band network capable of supporting voice, video and data transmission. Each classroom will be linked to that network. The network will be a cost effective vehicle to strengthen both administrative and educational programs and to improve communications within the District and between the schools and the community. The District's network will also tie into other regional, state, national and international networks to bring a world of resources to our students and teachers and to strengthen partnerships with other agencies.*

**Management:** The District will ensure that the network is supported and maintained in a timely fashion. To this end the District will establish standards for network design and equipment for school sites. The District will prepare annual network strategic and security plans and will develop and broadly disseminate policies and procedures to include network use, ethics, and copyright. The District will regularly revise and broadly distribute a Technology Users' Manual.

**Infrastructure:** Each classroom, library, media center, counseling office and administrative office will be linked with each other through a local area network and with every other facility in the District for data, voice and video communications through a wide area network. Through the District each school will be linked to a variety of regional, state and national networks.

## **NETWORKING** (continued)

KDOL-TV will manage the educational channels and have send and receive satellite capabilities. Each classroom will be capable of receiving one way video, and one room in each school and one room in the District's central office will be equipped for fully interactive video communications. [See also "Video Communications"]

**Applications:** All school sites will have on-line access to Oakland City Library, Internet & other libraries & research resources. All school sites & administrative offices will have access to voice mail, e-mail & fax communications. The District will host & coordinate teleconference and other electronic forums for school staff and the community.

## **ADMINISTRATIVE TECHNOLOGIES**

*The district will use technology to make the district's business practices more effective and efficient. The district will reduce costs and increase efficiencies by maintaining and supporting applications on a state-of-the-art broad band network. The district will coordinate technology planning, purchasing and implementation to ensure cost effective acquisition and use at both the district and site level.*

**Management:** The District will develop and improve its capabilities to plan, maintain and support Business Services and other District wide divisions effectively and efficiently using appropriate technologies. [See also "Technology Service Center"]

**Applications:** The District will continue to plan, develop, and maintain cost effective, up to date business applications to improve the overall operations of the schools and central offices.

**Infrastructure:** Each school and central administrative office will have desktop technology, modem or network connection, fax; sufficient lines to support voice and data communications; and ready access to telephone, voice mail, e-mail, fax and duplication technologies.

## **OTHER TECHNOLOGY SUPPORT:**

*School Sites and administrative offices must be able to purchase, protect and repair their hardware in a timely and most cost effective manner and to acquire a wide range of software at the lowest possible price.*

**Purchasing:** The District will establish policies covering the purchase of hardware, software, supplies and accessories needed to implement the technology programs within the District and at school sites. To reduce costs and streamline acquisition procedures for the District and school sites the District will establish annual contracts for goods and services and District licenses for software.

**OTHER  
TECHNOLOGY  
SUPPORT:**

*(continued)*

**Security & Insurance:** All school sites will have security systems to protect their investments in technology. The District will obtain and maintain a District wide insurance policy that adequately protects the District's and school sites' investment in technology.

**Repair/Maintenance:** The District will ensure that all hardware is installed, maintained and repaired in a timely and cost effective manner by maintaining annual service contracts, student repair programs. Schools will prepare a maintenance, repair and replacement schedule for on-site equipment.

**COORDINATION  
& MANAGEMENT**

*Technology has become a permanent component of a sound educational program and is resulting in major changes in the entire educational process - and in the way we communicate and conduct business as an institution.*

Ensuring that our students realize the full benefits from the District's investment in technology will require leadership and a strong commitment from the Board, administration, school and community. As the District embraces site based management, coordination and communications becomes increasingly vital. The District and school sites must have the will and the systems to cooperatively plan, coordinate, support and evaluate technology if technology is to be deployed efficiently and effectively.

To facilitate this coordination and to provide necessary support services to its multi-million dollar commitment to technology the District will consolidate and expand technology support services under one Technology Service Center.

**RESPONSIBILITIES:**

**Board of Education:** Make the Technology Plan a community wide priority and, direct resources to support the Technology Plan. Ensure that technology is used to further the Educational Plan and to avoid waste and fragmentation of services.

**Superintendent:** Make the Technology Plan a community wide priority. Establish District wide systems and procedures to implement, support and monitor the Technology Plan. Appoint the Technology Coordinating Committee and implement the Technology Service Center.



## *COORDINATION & MANAGEMENT (continued)*

### *RESPONSIBILITIES: (continued)*

**Technology Coordinating Committee:** Recommend District policy, coordinate the implementation of the Technology Plan, take the lead in planning and evaluation of technology, and provide direction to the Technology Service Center. Establish a process to ensure that District departments and divisions and school sites incorporate technology into their annual plans. Establish a process to evaluate and update the Technology Plan on a regular basis. Include representatives from Business Services, Curriculum and Instruction and school sites.

**Site Technology Coordinators and Committees:** Integrate technology into site plans. Develop and coordinate the implementation of the site technology plans. The District Technology Coordinator will provide support for Site Technology Coordinators.

**District Technology Coordinator:** Oversee the planning and implementation of the Instructional Technology Resource Center's services and coordinate staff technology training with Curriculum and Instruction. Work with other staff of the Technology Service Center to coordinate instructional technology with administrative technology.

### *TECHNOLOGY SERVICE CENTER*

**Background:** During the District's technology audit and needs assessment schools consistently identified the District's limited ability to provide basic, ongoing and timely support for instructional technology as a major barrier.

Schools clearly want planning and implementation to remain with the site community, but they feel the District should take responsibility for training and supporting on-site expertise, design and management of wide area networks, effective purchasing procedures, software licenses and service contracts, research and establishment of standards, liaison with vendors, information clearinghouse functions, help with funding, and timely, reliable help.

Management Information Systems, which has provided that infrastructure and support systems for administrative technology for the last three years, presents a model for developing comparable support mechanisms for instructional technology.

## *COORDINATION & MANAGEMENT (continued)*

### *TECHNOLOGY SERVICE CENTER*

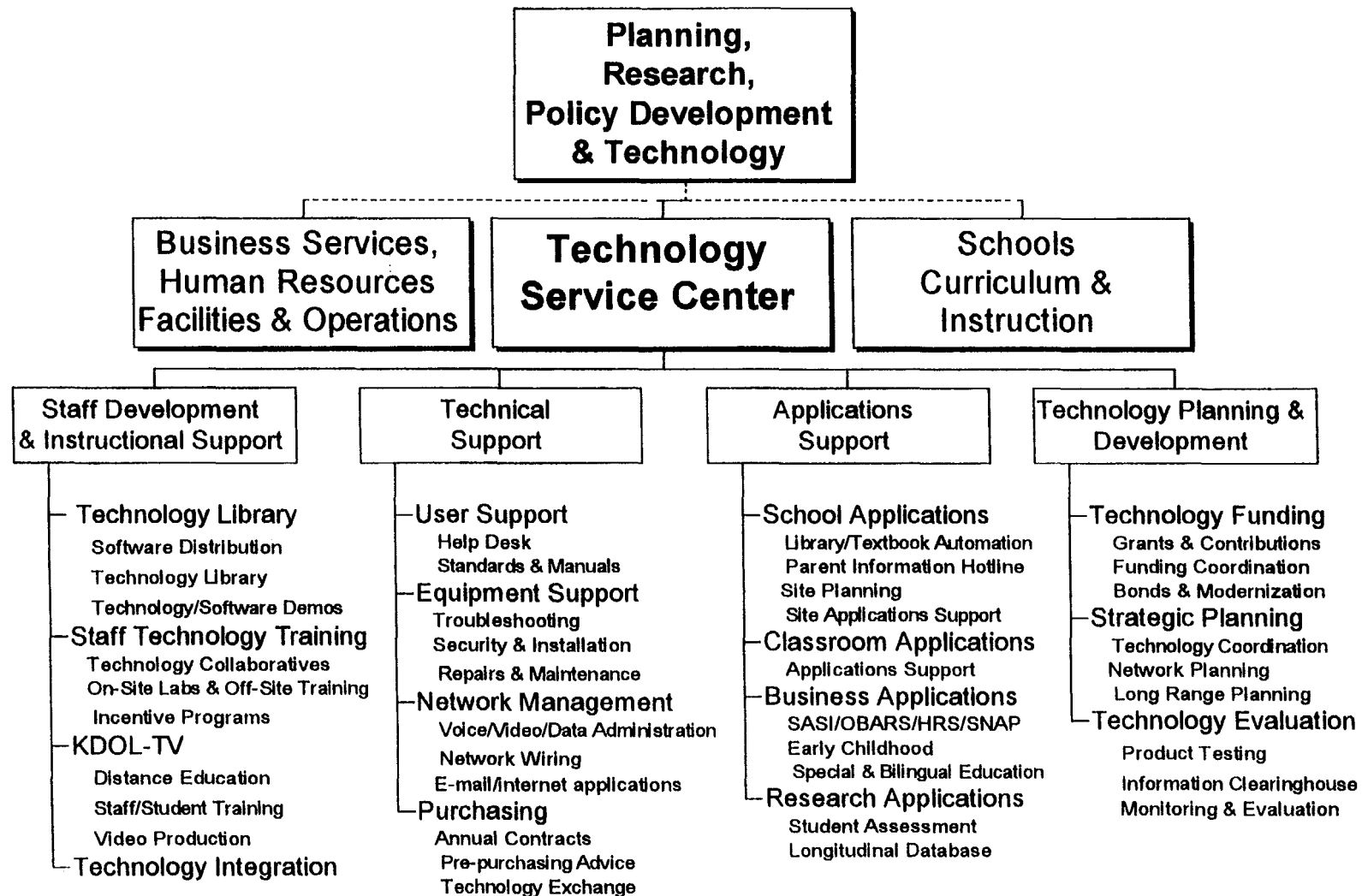
**Proposal:** The District will consolidate support for all technology, including phone, video and data systems, under a central Technology Service Center. This Service Center will merge with MIS to provide technical support for school sites, Curriculum and Instruction, Business Services and other central divisions. The Center may either provide services itself or ensure that cost effective services are available through contracts, licenses, service agreements and/or partnerships with the schools and other institutions.

Schools and the individual departments will continue to be responsible for the planning and implementation of their respective technology related applications and programs.

The Center will serve as a "one stop" service unit (see "Functional Chart on the next page) for:

- The Technology Resources & Training Center
- Technology Training
- KDOL-TV Video Communications Center
- Help Desk
- Facilitating Purchasing of Technology, District Licenses & Service Contracts
- Business Services
- Network Management
- Coordination of Technology Grants, Contributions & Technology Partnerships
- Technology Exchange & Contributions Program
- Research and Technology Evaluation

## Proposed Technology Service Center Functional Chart



## **FUNDING & RESOURCE**

**DEVELOPMENT:** *The District is committed to securing stable and broad based funding to support the ongoing investment in curriculum, staff development, the technology tools, and the infrastructure which are necessary to implement the Technology Plan. A coordinated funding strategy will produce a dependable, continuous revenue stream to ensure equity of access to the technology tools. Each year technology funding will be directed towards clearly articulated District wide priorities.*

In 1995-96 the District will implement the following:

**GP Funding:** The Board will increase the allocation of General Purpose funds to .5% to implement the Technology Plan. Funding should be directed to support shared technology services. Priorities for funding include: staff development, networking and developing the support infrastructure.

**Technology Equipment Fund Surcharge:** The Board will create a Technology Equipment Fund through a 25% surcharge on the purchase price of all technology requiring maintenance and replacement. In the first year after purchase the surcharge will fund installation, security, insurance and maintenance. In years 2 through 5 the surcharge will support maintenance, repair and replacement of equipment.

**Resource Development:** The District will staff and implement the Technology Contributions and Exchange programs.

**Outside Funding:** The District will develop the capacity to generate revenue from grants, contributions, and events. To this end the District will retain a professional grant writer to track, coordinate and apply for grants to support the Technology Plan and to provide training and assistance to schools seeking outside funding. The District will also involve teachers, administrators and parents fundraising expertise.

**Public Relations:** The District will develop and implement an aggressive public relations program to recruit support for the Technology Plan from local corporations, community agencies, private foundations and other educational institutions.

**Funding Plan:** The District will evaluate the effectiveness of the 1995-96 funding strategies, further explore the funding options outlined on the next page and develop a three year funding plan to be implemented in fiscal year 1997.

### **THREE YEAR FUNDING PLAN - OPTIONS:**

**Re-Allocation of Resources:** The District will re-direct an increasing portion of existing General Purpose and non-General Purpose revenues to support the implementation of the Technology Plan. Existing business and administrative practices will be streamlined using technological capabilities to reduce costs and to allow staff to redirect time. Resulting cost savings will be re-directed to support technology based services. Savings realized at a site level will remain at the site.

# *OAKLAND UNIFIED SCHOOL DISTRICT*

## TECHNOLOGY ACTION PLAN

### ***PURPOSE***

The Oakland Unified Schools District developed the District wide Educational Technology Action Plan to articulate a common vision for technology in Oakland schools and provide a road map for the effective integration of technology into all phases of the instructional program and administration of the District.

***ORGANIZATION:*** The plan is divided into four sections:

- **Executive Summary** which outlines the basic goals and objectives of the Plan
- **The Parameters of the Plan** which reviews the policies that drove the plan.
- **Findings** which summarize the results from the search of the literature, community interviews, staff surveys and the audit of technology in the schools.
- **Implementation Strategies** which presents the twelve basic strands, objectives for each strand and the implementation strategies.

### ***BACKGROUND***

The Action Plan was built on input from many people:

- The Board Technology Subcommittee
- The District's Technology Coordinating Committee
- The 1991 "Blueprint for Technology" by the Technology Teachers' Task Force.
- On-site surveys of 4038 rooms in 87 Oakland schools.
- Surveys of technology use completed by 141 teachers.
- Interviews with 19 educational partners
- Individual interviews with 39 teachers and administrators.
- Group interviews with librarians, mentor teachers, foreign language teachers, counselors and members of the Technology Alignment Committee.
- Plans completed by the Demonstration Schools
- Experience from other school districts.

Please see Appendices A through C for a list of participants.

### *FUNDING &*

### *RESOURCE*

### *DEVELOPMENT: (continued)*

#### *FUNDING OPTIONS: (continued)*

**Equipment Fund:** The District will establish and maintain an Equipment Fund supported through an annual surcharge based on the purchase price of all technology requiring maintenance and replacement. In the first year after purchase the surcharge will fund insurance, installation, security, and repair and maintenance. In years two through five the fund will support repair, maintenance and replacement of equipment.

**Technology Exchange & Contributions Programs:** The Service Center will establish a Technology Exchange Program to re-deploy technology within the District and a technology Contributions Program to aggressively pursue in-kind contributions to schools.

**Grants, Contributions, Partnerships and Events:** The Service Center will aggressively seek grants, assist school sites apply for grants and encourage vendor and private sector participation in technology based projects at the school and District level. The Service Center will seek partnerships with other agencies to acquire technology, develop applications, share costs of development, and extend the District's network resources. The District will sponsor events to generate support and revenue for school technology projects.

**Parcel Tax and Assessment Districts:** The District will explore the feasibility of seeking a parcel tax and/or creating assessment districts to support the Technology plan.

**Parcel Tax and Assessment Districts:** The District will explore the feasibility of seeking a parcel tax and/or creating assessment districts to support the Technology plan.

**Fees for Service:** The Service Center, including KDOL-TV and the training labs, will charge departments and school sites for specialized services which exceed the base line services provided by the Center. The Center will establish a fee schedule for services rendered to outside agencies.

**Student Training and Support Services:** As an integral part of the School to Work plan and the Service Center, the District will train and utilize students to maintain and repair technology and to provide support services in the library and media centers, computer labs, and Service Center.

**School Site Budgets:** School sites will incorporate technology planning into their site plans and set aside a percentage of their budgets for site technology planning and training.

**Legislative Initiatives:** The District will develop the capacity to track and advocate for federal, state, and local legislative initiatives to provide financial and other support for educational technology.

## *PLANNING PROCESS*

The Plan was developed under the direction of the District Technology Coordinating Committee and the Board Technology Subcommittee and built off the work of many people. Please see Appendices A, B and C for a list of all those who contributed to the Plan.

The initial planning steps included:

- Research of the literature
- Interviews with District and school personnel and representatives from the District's educational partners
- A room by room audit of technology in the schools
- Surveys of site personnel

During this time the Committee also undertook some short term projects which resulted in:

- Acquisition of District licenses for key software.
- The Repair Contract with the County Office of Education.
- Annual contracts for security and installation
- An annual plan for KDOL-TV.
- The establishment of the Chapter I Homework Hotline.
- Successful application for funding to support distance education projects and a math/science based video production training curriculum.
- Participation in inter-agency planning efforts.
- District acquisition of Internet services, the startup of the District's network, ACORN, and the library access project.
- The publication of the first Technology Users' Manual

In the fall of 1994 the Committee circulated the first draft of the plan, entitled "the Framework for Educational Technology, for comment. Over 1,500 copies of the Executive Summary and 1,000 copies of the complete Framework along with reaction forms were circulated. In addition the District:

- Participated in the Technology Fair sponsored by Marcus Foster Institute and Clorox Company.
- Held three public hearings.
- Conducted two Board presentations which were cablecast.
- Prepared a video presentation which was shown at Board meetings and public hearings and cablecast over KDOL-TV.

Based on the feedback, the Technology Coordinating Committee revised the Framework and developed the final Action Plan in May 1995.

## PARAMETERS

## MISSION & GOALS

*The District's Educational Technology Plan is driven by the District's Educational Plan. Technology has become a permanent component of a sound educational program and is resulting in major changes in education. Therefore, technology must be rooted in the entire educational process. It must be an integral and required part of education that is included in the same processes that define what and how we teach to the whole student.*

### **MISSION: EDUCATIONAL PLAN**

It is the mission of the Oakland Unified School District to educate all students so as to help them meet or raise their aspirations, to enable them to choose from the widest range of personal and career choices possible, and to prepare them to be effective, contributing citizens of their community.

### **MISSION: TECHNOLOGY PLAN**

The purpose of the Educational Technology Plan is to support and strengthen the District's Educational Plan. The District is committed to prepare all students for citizenship in a changing local and global community as well as for the workplace of tomorrow. Our students must have access to the technology which will enrich their education and which will be an integral part of their lives in the future. Educational technology offers a set of tools which enhances student learning and increases the productivity of staff. The technology tools can be used to improve, augment and support curriculum and delivery of instruction as well as the overall management of District resources. The focus of this plan is the education of all Oakland students, regardless of gender, age, ethnic group, ability or socio-economic status.

### **GOALS:**

To this end the Educational Technology Plan will:

#### **Goal #1      Improve the quality of instruction by:**

- ensuring equitable access by students throughout the District to curriculum, instructional support and technology.
- enhancing and enriching classroom instruction through the use of appropriate technologies.
- bringing the resources of local universities, colleges, museums and other educational institutions into the classroom through resource sharing and partnerships using electronic networks.
- training students to understand and master technologies needed to be successful in tomorrow's world.



### *GOALS*

*(continued)*

#### **Goal #2      Improve Staff Capabilities by:**

- providing technology tools which improve classroom and school site management.
- giving teachers and District staff the training and support to understand technology based options and to integrate technology into classroom curriculum.
- enhancing and increasing opportunities for continuing education and development for District personnel through the use of the telecommunications and other technologies.

#### **Goal #3      Inform & Educate Families & the Community by:**

- involving parents in the education of their children.
- facilitating community participation in their schools.
- extending educational opportunities into the community through the use of telecommunications and other technologies .

#### **Goal #4:      Improve Operations of the District by:**

- enabling the District to make informed and cost effective decisions about technology acquisition.
- improving the overall effectiveness and efficiency of the District.
- more effectively managing its use of technologies.
- encouraging interagency cooperation to maximize utilization of technology.

*Since the Technology Plan must ultimately support the District's Educational Plan, this section summarizes the Educational Plan's key elements that are shaping educational reform in the District. The Educational Plan is intended to provide systemic, and strategic, student-centered and site based approaches to improving education in the Oakland Public Schools. The Educational Plan focuses the entire district in a common direction.*

***FIVE VALUES***

Five values drive the plan:

- We are dedicated to the development of the whole child.
- All children can learn.
- We are committed to the achievement of equity.
- Improving schools must involve the entire school community.
- School change takes time and resources.

***STRATEGIES***

Three strategies are central to the implementation of the Plan:

- Site-based development
- Demonstration training centers
- Voluntary Desegregation Plan

***ELEMENTS***

Schools are expected to have the following elements in place:

- Qualitative parent participation
- Interactive teaching as the predominant mode of instruction
- New technology to deliver a unified curriculum in dynamic ways
- Classroom supports for learning
- Mental health and/or instructional models to respond to site needs.

***SUSTAINED  
CHANGE***

The Plan recognized that change must be sustained over time in various ways:

- Site-Based Development
- Recruitment/Orientation/Training of Staff
- Infusion of Outside Resources
- Broad Inclusion
- Institutionalization

## PARAMETERS

# CALIFORNIA'S MASTER PLAN FOR EDUCATIONAL TECHNOLOGY

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*The District's Technology Plan must also be in accordance with the State of California's Master Plan for Educational Technology.*

### **OBJECTIVES:**

The Master Plan identified five objectives which are crucial to the future success of education in California and technology's contribution to that success:

- Equity of access to technology resources
- Equity of resources anywhere learning and teaching occur
- Coordination of resources from public and private providers
- Electronic linking of educational agencies, and
- Coordination of educational technology among the four segments of California public education: K-12, California Community Colleges, the University of California and the California State University system.

### **RECOMMENDATIONS:**

The Master Plan also concluded with nine global recommendations:

- **Technology in every learning environment:** provide access to an array of information and instructional technology devices and instructional resources for every learner, faculty and staff member in every teach/learning environment.
- **Professional development and support:** provide equity of access to sustained and ongoing professional development and technical support for every information technology user in the teaching/learning process.
- **Golden State Education Network:** establish and coordinate a statewide integrated linking of voice, video and data networks.
- **Instructional and information resource:** improve existing and establish new statewide instructional and information resources.
- **Student data resource:** establish a statewide student data resource for educators and administrators.
- **Management information system:** establish a statewide administrative/management information resource.
- **Educational technology coordination:** establish a state-level inter segmental educational council and an industry council to collaboratively implement the Master Plan and to develop future plans.
- **Evaluating the implementation of the Master Plan:** provide for ongoing evaluation of the extent and impact of the implementation of each recommendation of the Master Plan.
- **Resources to accomplish the Master Plan:** develop substantial, sustained public and private funding mechanisms for the recommendations of the Master Plan

## PARAMETERS

## NATIONAL INFORMATION INFRASTRUCTURE

*"...We must work with the private sector to connect every classroom, every clinic, every library, and every hospital in America to a national information highway by the year 2000. Instant access to information will increase productivity, help educate our children and provide better medical care and create jobs..."* President Clinton, State of the Union Address, January 25, 1994.

*"The good news the information highway is going to come. The bad news is that it's going to be a toll road."* Paul Saffo, Institute for the Future, Menlo Park, November 1992.

This administration has made telecommunications a national priority, and the proposed the National Information Infrastructure (NII) is structuring much of the debate about technology. We include a brief overview of the NII to provide additional context for Oakland's vision for its schools.

### GOALS OF THE NII

The goals for the NII include connecting the nation's businesses, residences, schools, health care facilities, and other public information and social service providers through an affordable broad band, interactive, telecommunications and information network.

### WHAT IS THE NII?

The NII will be capable of transporting large quantities of data at high speed and make two-way video as commonplace as phone conversations are today. The NII will consist of (1) thousands of interconnected, interoperable telecommunications networks, (2) computer systems, televisions, fax machines, telephones and other "information appliances", (3) software, information services, and information databases (e.g., "digital libraries"), and (4) trained people who can build, maintain and operate these systems.

### FUNDING

The Administration's program stresses a government-private sector partnership in which the federal government promotes necessary development, but does not become the national network operator or funder. The government will support research, address policy issues and fund demonstration projects. The National Telecommunications & Information Agency (NTIA) has dedicated \$26 million for demonstration grants in 1994 and promises significantly more in 1995.

### ISSUES:

The NII has raised a wide range of issues which are currently under debate, including: (a) the justification for the estimated \$50 to 100 billion investment over the next ten years to "build" the highway, (b) how much of the costs of building the highway should be borne by the consumer, (c) the creation of information "haves" and "have nots" in a competitive marketplace, (d) the re-definition of "universal service," and (e) how strapped public institutions can fund the costs of using that information highway.

*[The above was abstracted from documents prepared by the NTIA.]*

*Interviews were conducted with nineteen representatives from educational institutions, and community agencies. In addition one on one interviews were held with thirty nine teachers, administrators and volunteers who work closely with the OUSD. The purpose of the interviews was to identify how these institutions are planning for technology, to solicit input into the District's plan and to explore how technology might strengthen future partnerships. See Appendix B for a list of interviewees.*

*To capture the interviewees' sentiments each section begins with some quotes from interviewees - and a few selected pundits followed by a brief summary of the findings.*

### TECHNOLOGY TRENDS

*"I'm not sure where it's all heading, but I know we'd better get ready."*

*"We've all got to learn how to manage change."*

*"It's an amazing invention, but who would ever want to use one?" [Rutherford B. Hayes, 1928, upon using a telephone for the first time]*

**Digital:** All electronic communications will be digital; voice, video and data will be integrated on one computer-software controlled transmission facility.

**Network of Networks:** There will be a network of private and public networks connecting homes, businesses and public institutions. These networks will decentralize decision making and create readily accessible international communications systems.

**Ubiquitous:** Telecommunications and computers are permeating our individual lives at a geometric rate.

**Faster:** What took one month to execute in 1940 required less than .1 second in the '80's and nanoseconds in the '90's.

**Cheaper:** A \$1000 information transaction in 1940 costs \$.00001 today.

**Workforce:** *"An Information economy will require a highly trained workforce. And the half-life of a college graduate will get shorter and shorter. Workers of the future will have to be re-tooled several times during their working life."*  
Wendy Schultz, Hawai'i Research Center for Futures Studies.

**Diversity:** There will be a continued need to find new ways to serve an increasingly diverse community.

**Collaborations and partnerships:** The need to access information, to reduce costs and to take full advantage of the technology will force collaborations.

**Schools without walls:** Schools will be able to teach independently of time and place

### ***IMPETUS TO PLAN FOR TECHNOLOGY***

*"I'm appalled at our inability to manage our business."*

*"Diminishing budgets and increasing demands for service are forcing us to re-evaluate how we do business."*

*"We've just begun to understand the impact of computers."*

**Unmet constituency needs:** Traditional means of conducting business are not meeting our communities' and students' needs.

**Diminishing budgets:** In the foreseeable future public institutions will continue to be required to do more for more people with less resources.

**Management:** Technology gives institutions new tools and opportunities for greater efficiencies. It also places new strains on existing management systems which must be resolved if the technology investment is to pay off..

**Changing Workforce:** The private sector has embraced technology. Students without technology tools and skills will not be competitive.

**Outside pressure:** As more and more institutions rely on technology to deliver services, to provide information and to communicate, the schools must invest in the same technology if students, staff and families are to benefit from these services.

### ***BARRIERS***

*"It's hard to get your arms around technology."*

*"Problems with educational use of technology are institutional and political."*

*"It's money!" It's hard to think of supporting something new when you can't provide the basics."*

*"With technology we just have to change the way we do business."*

**Insufficient resources:** Budget limitations and funding restrictions have resulted in "haves" and "have nots" within institutions and inefficient deployment of technology. It is hard to justify the perceived short term high costs of entry when the pay out is long term.

**Changing technology:** It is difficult to make choices and estimate future costs when technology is changing so rapidly.

**Competing Priorities:** Funding for technology is seen as competing with more urgent needs.

**Technology not institutionalized:** Technology acquisition, support and management within institutions are fragmented, duplicated, inadequate and hard to access.

## FINDINGS

## COMMUNITY RESOURCES & PARTNERS

### ***BARRIERS***

*(continued)*

**Communications and coordination:** In light of school based management and de-centralization successful integration of technology requires good communications, coordination and a redefinition of roles and responsibilities of central office.

**Leadership and expertise:** There is a need for District leadership in technology and more expertise at both the District and school site level.

**Staff resistance:** Technophobia, uncertainty about the educational benefits of technology, time required to master the tools and applications, competing demands, lack of confidence in the District, and difficulty in accessing tools and information all contribute to staff resistance to technology and technology training.

**Regulatory and policy frameworks:** The national and state policies regarding technology are in flux. Existing guidelines and regulations work against more effective use of technology.

### ***POLICY ISSUES***

*"The good news is that the information highway is coming. The bad news is it's going to be a toll road."*

*"Who's going to pay for all this?"*

*"Technology forces us to re-examine how we allocate our resources. What's the role of textbooks in a multimedia environment?"*

*"The schools and local governments haven't been players in establishing telecommunications policy."*

**Access:** Unless schools have access to broad band services at low costs the benefits of technology will not be felt for a long time, especially in low income communities. Should all telecommunications providers be required to provide some free or low cost services to schools as part of a new "Universal Service" policy?

**Re-allocation of resources:** The capacity of the technology will force the District to examine how resources are currently allocated for operations and for instruction.

**Traditional relationship among institutions:** Technology will break down the traditional boundaries between institutions and make collaborations and partnerships inevitable.

### ***PRIORITIES***

*"There were 210 African American males in the sophomore class. There were 60 by the time they were seniors."*

*"10% of the teachers take advantage of any training opportunity. Since teachers are the key to technology change, we have to find better ways to reach the remaining 90%."*

*"Our systems are on over-load."*

### ***PRIORITIES***

*(continued)*

*"We can't prepare our students for deadend jobs."*

*"Technology is just a tool to stimulate the learning process - not an end in itself. We don't exist just to give kids technical skills."*

**Communications:** The focus should be on the network and improved communications.

**Increase resources:** Priority should be given to those technologies that bring more resources to students, staff and families.

**Educational Plan:** Technology must be used to support of the District's Education Plan and effective teaching/learning strategies.

**Increased efficiencies:** Technology applications which reduce costs, increase efficiencies and permit staff to spend more time with students should be given priority.

**Career Options:** Technology should be used to allow students to master the skills and the tools to compete in and adopt to a changing workplace.

**Funding:** What role will federal, state, and local funders play in supporting educational use of technology? Schools must commit to a long term funding strategy to support technology.

### ***PARTNERSHIP***

### ***OPPORTUNITIES***

*"It's not a matter of will; we just can't afford to continue on our own."*

*"I don't think the District knows what it wants from its partners."*

*"There's an increasing polarization in the community. We must keep channels of community dialogue open - open to find mutual needs and ways to support each other."*

*"We're going to deliver our information on-line. If the kids are going to benefit from this partnership, then the District must invest in the modems and phone lines."*

Interviewees identified the following as potential partnership activities:

- Network resources: joint acquisition of shared satellite equipment, shared costs of radio systems for safety personnel, joint use of microwave and cable channels,
- Funding proposals: funders are emphasizing inter-agency collaborations (ex., NTIA)
- Acquisitions and development: Ex., Geographic Information Systems, development tools, e-mail
- Curriculum materials: Ex., joint development of bilingual multimedia materials, delivery of state of the art science and math materials directly to the classroom using high speed data lines.



### ***PARTNERSHIP***

#### ***OPPORTUNITIES*** (continued)

- **Access to Information:** Ex., access to library collections and regional databases, joint development of specialized databases (bilingual, student services)
- **Staff development and support tools:** Ex., ongoing collaboration between subject matter experts and classroom teachers via the Internet; interactive forums among math teachers from local districts.

### ***IMPLEMENTATION***

All interviewees offered words of wisdom for the District's Plan:

*"For the plan keep your eye on the big issues - the strategies. Don't try to be prescriptive, because you can't anticipate the changes in the next five years. Then let the experts fill in the details".*

*"Most important - just get the technology into the hands of the teacher."*

*"Just get the technology to the kids. Don't wait for reluctant teachers."*

*"You can't mandate the integration of technology; it has to evolve."*

*"Central office should do research and development, set the standards, deal with vendors and support the plan. Let the school sites implement the policy goals."*

*"The best staff development strategy is to place a technology specialist at each site - a person who sees the job as training adults."*

*"Stress functionality, not technology."*

*"Plan to do it incrementally. Focus on communications. Just installing e-mail lead to major changes in our district."*